WHAT IS CLAIMED IS:

1. A moving object detector comprising:

an effective macroblock identification unit for

5 identifying one or more candidates for a macroblock that can

be contained in an on-screen moving object as one or more effective

macroblocks by using an encoding parameter; and

a moving object determination unit for determining whether

or not each of the one or more effective macroblocks identified

10 by said effective macroblock identification unit is contained

in a moving object based on a number of effective macroblocks

(referred to as a number of adjacent effective macroblocks from

here on) which are directly adjacent to each of the one or more

effective macroblocks or indirectly adjacent to each of the one

15 or more effective macroblocks via one or more other effective

macroblocks.

2. The moving object detector according to Claim 1, wherein

said moving object determination unit counts the number of

20 adjacent effective macroblocks for each of the one or more

effective macroblocks identified by said effective macroblock

identification unit, and, when the number of adjacent effective

macroblocks exceeds a predetermined threshold value, determines

that a group of plural effective macroblocks directly or

25 indirectly adjacent to one another and including each of the

one or more effective macroblocks is a moving object.

3. The moving object detector according to Claim 1, further

comprising a coded stream analyzer for analyzing a coded stream

30 obtained by encoding a moving image so as to extract an encoding

parameter from the coded stream, and for outputting the encoding parameter to said effective macroblock identification unit.

4. The moving object detector according to Claim 1, further comprising an encoding parameter input unit for receiving an encoding parameter generated when a moving image is encoded, and for outputting the encoding parameter to said effective macroblock identification unit.

5. The moving object detector according to Claim 1, further comprising a moving object coordinate storage unit for storing on-screen coordinates of each effective macroblock which has been determined as a macroblock contained in a moving object by said moving object determination unit, a motion vector storage unit for storing a motion vector for each effective macroblock which has been determined as a macroblock contained in the moving object, and a coordinate calculation unit for calculating a prediction of the on-screen coordinates of each effective macroblock in a next frame based on the on-screen coordinates of each effective macroblock stored in said moving object coordinates storage unit and the motion vector for each effective macroblock stored in said motion vector storage unit, wherein said moving object determination unit determines whether or not each of the one or more effective macroblocks identified by the effective macroblock identification unit is contained in a moving object by using the one or more effective macroblocks and macroblocks each having a prediction of its on-screen coordinates calculated by said coordinate calculation unit.

6. The moving object detector according to Claim 5, wherein

said moving object determination unit determines whether or not each of the one or more effective macroblocks identified by the effective macroblock identification unit is contained in a moving object based on the number of adjacent effective macroblocks

5 which are an overlap among a group of plural effective macroblocks directly or indirectly adjacent to one another and including each of the one or more effective macroblocks and the macroblocks each having a prediction of its on-screen coordinates calculated by said coordinate calculation unit.

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7. The moving object detector according to Claim 5, wherein said moving object determination unit counts the number of adjacent effective macroblocks which are an overlap among a group of plural effective macroblocks directly or indirectly adjacent

15 to one another and including each of the one or more effective macroblocks and the macroblocks each having a prediction of its on-screen coordinates calculated by said coordinate calculation unit, and then determines whether or not each of the one or more effective macroblocks identified by the effective macroblock

20 identification unit is contained in a moving object based on the counted number of adjacent effective macroblocks.

8. The moving object detector according to Claim 1, wherein said effective macroblock identification unit identifies a

25 macroblock as an effective macroblock that can be contained in a moving object when an encoding mode of the macroblock extracted as the encoding parameter of the macroblock is an intra coding mode.

30 9. The moving object detector according to Claim 1, wherein

said effective macroblock identification unit identifies a macroblock as an effective macroblock that can be contained in a moving object when an encoding mode of the macroblock extracted as the encoding parameter of the macroblock is a motion

5 compensation prediction mode.

10. The moving object detector according to Claim 1, wherein said effective macroblock identification unit identifies a macroblock as an effective macroblock that can be

10 contained in a moving object when a number of DCT coefficients of the macroblock extracted as the encoding parameter of the macroblock is equal to or greater than a predetermined threshold value.

15 11. The moving object detector according to Claim 1, wherein said effective macroblock identification unit identifies a macroblock as an effective macroblock that can be contained in a moving object when a sum of codes of AC components of DCT coefficients of the macroblock extracted as the encoding

20 parameter of the macroblock is equal to or greater than a predetermined threshold value.

12. The moving object detector according to Claim 1, wherein when an encoding mode of a macroblock extracted as the

25 encoding parameter of the macroblock is a motion compensation prediction mode, said effective macroblock identification unit calculates a norm of a motion vector calculated for the macroblock, and identifies the macroblock as an effective macroblock that can be contained in a moving object when the calculated norm

30 is equal to or greater than a predetermined threshold value.

13. An image monitoring system including a moving image decoding unit for receiving a coded stream obtained by encoding an image generated with a camera by way of a transmission path

5   and for decoding the coded stream, and a monitor for displaying the decoded image obtained by said moving image decoding unit, said system comprising:

a moving object detector including an effective macroblock identification unit for identifying one or more candidates for

10   a macroblock that can be contained in an on-screen moving object as one or more effective macroblocks by using an encoding parameter, and a moving object determination unit for determining whether or not each of the one or more effective macroblocks identified by said effective macroblock identification unit is

15   contained in a moving object based on a number of effective macroblocks which are directly adjacent to each of the one or more effective macroblocks or indirectly adjacent to each of the one or more effective macroblocks via one or more other effective macroblocks.

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14. The image monitoring system according to Claim 13, wherein when said moving object detector determines that any moving object does not exist in a preceding frame but one or more moving objects exist in a current frame, said moving object

25   detector transmits a signal indicating a request for intra coding to a moving image encoding unit that generates the coded stream by way of the transmission path and said moving image encoding unit then intra-codes following frames of the image when receiving the request signal from said moving object detector.

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15. The image monitoring system according to Claim 14, wherein said moving image encoding unit intra-codes following frames of the image and also transmits information such as a time and characteristics of the image as metadata by way of the

5   transmission path when receiving the request signal from said moving object detector.

16. The image monitoring system according to Claim 14, wherein when said moving object detector detects a moving object,

10   said moving object detector outputs information such as a time and characteristics of the image as metadata.

17. An image monitoring system including a camera for generating an image of a monitor point, and a moving image encoding

15   unit for encoding the image generated by said camera and for outputting the encoded image as a coded stream, said system comprising:

a moving object detector including an effective macroblock identification unit for identifying one or more candidates for

20   a macroblock that can be contained in an on-screen moving object as one or more effective macroblocks by using an encoding parameter; and a moving object determination unit for determining whether or not each of the one or more effective macroblocks identified by said effective macroblock identification unit is

25   contained in a moving object based on a number of effective macroblocks which are directly adjacent to each of the one or more effective macroblocks or indirectly adjacent to each of the one or more effective macroblocks via one or more other effective macroblocks,

30   wherein when said moving object detector detects a moving

object, said moving object detector transmits a warning signal by way of a transmission path.

18. The image monitoring system according to Claim 17,
5 wherein only when said moving object detector determines that a moving object exists on a screen, said moving image encoding unit transmits the coded stream by way of the transmission path.

19. The image monitoring system according to Claim 17,
10 wherein when said moving object detector determines that any moving object does not exist in a preceding frame but one or more moving objects exist in a current frame, said moving image encoding unit intra-codes following frames of the image.

15 20. The image monitoring system according to Claim 17, wherein only when said moving object detector determines that a moving object exists on a screen, said moving image encoding unit intra-codes following frames of the image and also transmits information such as a time and characteristics of the image as
20 metadata by way of the transmission path.